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ABSTRACT

Over a six-year period, a team of staff members in a high school in the Phoenix, Arizona area explored ways to improve student success while simultaneously reducing instructional costs. Technology as a tool for change played a significant role in most of the solutions that were explored. Increasing access to computers and the Internet by students both at school and off-campus resulted in a proposal for implementing both Web-supplemented and Web-based instruction on a school-wide basis. Based on the preliminary work of the school-district technology personnel, it was decided to conduct a thorough review of approaches and strategies for teacher professional development and support in technology integration. It was envisioned that this study would further inform the decision-making process regarding the implementation of Web-based and Web-supplemented instruction at the high school and across the district. The investigation was carried out as a class project in an advanced graduate-level instructional design class at Arizona State University. The class project represents the beginning of a district-university collaborative effort. This paper describes the major findings of the investigation and offers practical strategies for teacher professional development and support. (AEF)

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Support and Training for High-School Faculty Who Will Teach Using the Web

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Session Objectives

The purpose of the presentation is for AECT participants to learn:

5. *About the major barriers that teachers face when trying to incorporate web-supplemented and web-based teaching into the school curriculum;*

- Practical strategies for providing adequate support and training to teaching staff on implementation of web-supplemented and web-based instruction in secondary schools.

Background of the Virtual School Project

Over a six-year period, a team of staff members in a high school in the Phoenix, Arizona, area explored ways to improve student success while simultaneously reducing instructional costs. Technology as a tool for change played a significant role in most of the solutions that were explored. Increasing access to computers and the internet by students both at school and off-campus resulted in a proposal for implementing both web-supplemented and web-based instruction on a school-wide basis.

During the first phase of the project, emphasis was on piloting two classes/teachers. One teacher began to develop web-supplemented instruction for a freshman English class. The other joined the faculty of The Virtual High School, a consortium project administered through the Concord School District in Concord, Massachusetts, that offers web-based, advanced level high-school courses to students from all across the United States. It is envisioned that the second phase of the project will expand to involve all high schools in the district.

From the start of the project it has been clear that technology is simply a tool rather than a replacement for superior instruction. Teachers have been and will be the primary providers of good instruction. Yet, the major missing component in most technology-integration projects in schools has been a lack of adequate teacher training and support (Office of Technology Assessment, 1995; President's Committee of Advisors on Science and Technology, 1997).

The Teacher-Support Component

The focus of the proposed presentation is on teacher support. Based on the preliminary work of the school-district technology personnel, it was decided to conduct a thorough review of approaches and strategies for teacher professional development and support in technology integration. It was envisioned that this study would further inform the decision-making process regarding the implementation of web-based and web-supplemented instruction at the high school and across the district. The investigation was carried out as a class project in an advanced graduate-level instructional-design class. The class project represents the beginning of a district-university collaborative effort. This presentation will describe the major findings of the investigation and offer practical strategies for teacher professional development and support.

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Needs Assessment and Content Development

During the teacher-support investigation, data were collected from four main sources. First, a review of relevant print and online resources was carried out. Secondly, the review of theoretical and applied articles was supplemented by analysis of individual case studies of professional-development programs or resources available for teachers on the web.

Interviews were conducted with five teachers at the high school. These teachers were identified by the campus technology coordinator as the core cluster of teachers who had expressed interest in using computers in the classroom. The teachers were asked about their concerns regarding the use of computers in teaching, their training needs and the types of support that they would need for implementing web-based and web-supplemented teaching in the classroom.

Data from five school or district-level technology coordinators and two faculty instructional-support staff members were also collected through interviews or an e-mail questionnaire. The respondents were asked about major barriers that teachers face regarding integration of computers, training needs and best practices for providing professional development opportunities, support, and incentive systems to teachers.

Findings

A brief summary of the main findings is presented below.

Major Barriers to Technology Integration

The most common barriers to technology integration in teaching are the increased preparation time, a lack of awareness of the general benefits of distance education, faculty compensation and incentives, access to appropriate technologies, a lack of shared vision for distance education in organization, institutional barriers and lack of support staff to help course development (Berge & Muilenburg, 2000; Moore & Kearsley, 1996; Office of Technology Assessment, 1995).

According to both the literature sources cited above and the accounts of the teachers and technology coordinators, the lack of time appears to be the single major factor hindering technology integration. Robinson (1995) suggests that development of information technology in education can be seen as part of the broader field of educational change in which there is a rich and useful literature (Fullan, 1993). Thus technology-integration efforts should be addressed as part of systematic efforts at improving *classroom practice*.

Teacher Training Needs

The University of Illinois Faculty Seminar Report (1999) highlights two distinct features of online pedagogy. First, the teaching paradigm must change from the traditional lecture format to one more suitable for online instruction. Secondly, the instructor has an important role in moderating the interaction. Porter (1997) suggests that only educators possessing certain qualities can be successful distance-learning instructors. Such qualities include the ability to learn new technology, a performance personality, flexibility, and time to create new materials and methods.

Training Models

Teacher training should focus on the use of technology in teaching rather than acquisition of skills using software (OTA, 1995; The President's Committee of Advisors on Science and Technology, 1997). No single approach is best for effective teacher professional development (OTA, 1995) and a variety of approaches should be used in combination at any given time. Some common strategies are developing technology rich classrooms as demonstration sites, training master teachers who then serve as resources to their colleagues and providing access to technical support staff.

Support Systems

Support systems should primarily address the major barriers to technology integration mentioned above. Unless a systemic approach to technology integration is adopted individual teacher training initiatives are likely to be ineffective. Providing time for experimenting with new technologies, and the support and incentives for doing so, are some of the most effective strategies. The report prepared by University of Illinois (1999) emphasizes the need for recognizing faculty intellectual property rights as the best way of assuring high quality of online teaching.

Implications for Teacher Professional Development and Support

The literature review, the interviews with the teachers, and the conversations with the technology coordinators have demonstrated that in order for technology integration to take place a comprehensive and systemic approach is necessary. A number of practical suggestions for implementing teacher training and support for web-based and web-supplemented teaching follow. The suggestions are presented in three broad categories: setting the stage, training strategies and support systems for sustaining change.

Setting the Stage

Set a Clear Vision

Have a clear vision of what your priorities are at the school or district level. Then examine ways in which technology can help you accomplish those broader goals. .Unless teachers see the link between improving quality of teaching and learning and use of technologies in the classroom any technology integration efforts are mots likely to fail.

Start in Small Steps That Ensure Success

Start in small steps by encouraging teachers to initially put their syllabus and class assignments on the web, or to create brief online quizzes, or begin using electronic grade books. Then provide them with a bigger picture of what the next steps in progression might be.

Evaluate Progress Against Initial Goals

Monitor the progress and measure the success of technology integration based on the initial goals. Technology integration is not about the number of computers in each classroom or about the number of internet connections it is about a better quality of teaching and learning.

Involve Faculty in Decision Making

Involve faculty in formulating the vision and setting priorities for your school as much as possible. Hiring external instructional designers and web developers may seem to be a quicker and more efficient short-term solution. Yet, this approach does not empower teachers to try out un-conventional instructional strategies or to model effective technology use to their students.

Establish External Partnerships

Establish external partnerships with local universities and businesses for additional expertise and support. For example, graduate students from universities can provide instructional design expertise to teachers for course development. Businesses can let teachers attend their training events or provide volunteers to coach teachers on technology skills.

Allocate Adequate Resources for Professional Development

US Office of Technology Assessment recommends that at least 30% of technology funds be spent on training. Provide teachers with release time for jump-starting new web-based courses, or stipends for attending training workshops. Compensate teachers instructing their colleagues on technology skills for planning time and training that they provide after school hours.

Provide a Common Set of Course Development and Delivery Tools

Consider adopting a commonly used courseware package such as Web CT, CourseInfo or others for the entire school or district. Provide training and technical support for the users. A common courseware

package provides students with the same interface for all the courses offered and they are not distracted from core learning tasks having to master a variety of applications. A common set of tools requires fewer resources for training, support and management of web-based instruction.

Provide Adequate Infrastructure and Technical Support

Ensure that teachers have access to the necessary hardware and software tools for developing and implementing web-based and web-supplemented instruction. One of the models that has proven itself successful has been providing the teacher with a laptop and equipping the classroom with a minimum of five workstations with internet connection. In addition, in order for web-based and web-supplemented instruction to be successful students also need to have access to computers and internet outside the regular school hours. A high-speed server for hosting web-based course materials is also an absolute necessity once web –supplemented and web-based instruction becomes more widely spread at the school.

Training Approaches

Pick Your Trainees Carefully

Web-based instruction requires considerable investment in training and daily coaching. Select your trainees carefully, especially at the initial stages of adopting web-based instruction at your school. For the trainees to be successful and to serve as role models for their colleagues they should meet a number of criteria. The trainees should be:

- Open-minded and willing to continually learn new technologies and teaching approaches;
- Experienced teachers who are familiar with a range of teaching strategies in face to face situations so that they have a pool of ideas to pull from for web-based instruction;
- Familiar with the course content to be delivered entirely or partially over the web;
- Comfortable with technology;
- Capable of collaborating with others;
- Willing to share their experiences and expertise with their colleagues.

Use a Variety of Training Approaches

Provide a wide selection of training opportunities to satisfy the varied training needs of the teachers. Those already familiar with technology will need only additional encouragement and ideas for classroom applications of technology that can be provided over the web. Novice learners will need very specific initial training aiming at teaching very specific technology skills and their applications for the classroom and ample opportunities to practice these skills.

Provide Follow-up Support

Avoid stand-alone training events whenever possible. Instead, offer a series of training events enabling teachers to come back with questions and to try out the newly learned skills in practice. Provide follow-up support at the school or district level by making the trainer accessible at least a few times a month or by encouraging the participants to form local support groups.

Focus on Classroom Application of Technologies

Focus all training on the classroom applications of technology rather than mastering specific software programs. Emphasis on the application of internet or software programs in the classroom will provide context for the training and will help teachers apply the newly learned skills in practice.

Provide Plenty of Real-Life Examples

Provide teachers with a range of real-life examples and case studies of successful technology integration initiatives. Whenever possible, the examples should offer solutions to the challenges and concerns that teachers face in the classroom on a daily basis, such as lack of student motivation, varied ability and interest levels of a diverse student population, lack of time to provide immediate feedback on student assignments and others.

Model Technology Use

Model technology use during training by choosing the most appropriate delivery medium. If you are training teachers on web-based teaching then at least part of the training should be delivered over the world wide web.

Provide First Hand Experiences With Technologies

Best of all if teachers have the opportunity to participate in web-based training themselves in order to step into the students' shoes. If that is not possible provide as much hands-on experiences with web-based and web-supplemented instruction during your training as possible.

Just in Time Training Works Best

Timing of the training is important. Target the training primarily at those who will need to deliver web-supplemented or web-based teaching in the very near future. Best of all, design the training around the actual course projects that the teachers will be implementing to ensure direct application of the newly learned skills in practice.

Allow for Plenty of Time

Learning takes time and opportunities for trial and error. Allow trainees time to try out smaller assignments and be successful before launching into larger semester-long course design projects. Research shows that on average it takes around three to five years for teachers to become comfortable with technology.

Do Not Have the Same Expectations for Everyone

Do not expect every faculty member to integrate technology into his or her teaching to the same extent. Each teacher has his or her own set of values and instructional approaches to make him or her most effective in the classroom. Web-based instruction requires a major change in one's teaching and learning approach and the medium might not suit everyone.

Support Systems for Sustaining Change

Provide Ongoing Technical Support for Teachers and Students

Once web-supplemented and web-based courses are offered at a relatively large scale at the school or at the district both teachers and students must have access to a technology help desk by phone twenty-four hours a day. In addition to campus technology coordinators, school librarians or media specialists could be trained to provide necessary technical support. Librarians could also provide instructional support to teachers by locating useful web sites for instruction or coaching students on internet search skills or online study strategies.

Use Students in Faculty Support Roles

Ask motivated high school students with technology skills to assist faculty in putting their courses on the web. Students could undertake these tasks as independent study projects or as part of their school to work experiences.

Provide Opportunities for Sharing of Ideas and Information

Set up a curriculum and technology resource center at the district level where teachers could access to additional computers, software and information and advice regarding web-based instruction. Set up and maintain a support web site for teachers where they could access online tutorials, share lesson plans and plan collaborative course projects.

Consider Adequate Recognition and Rewards

Recognize teachers who excel in web-based and web-supplemented teaching as instructional innovators. Recognition in front of peers is one of the most effective means for rewarding an accomplished teacher.

Develop and Implement a Clear Intellectual Property Rights Policy

Develop and implement a clear intellectual property rights policy at the school or district level. Teachers should never feel that by developing online courses they will some day lose their jobs or that someone else will teach their courses. Before developing new online materials an agreement should be signed between the author and the school or the district as to who will own the materials once it is published online and how the materials will be used. The developer should always be asked for permission when his or her materials are to be used for other courses.

References

Berge, Z.L. & Muilenburg, L.Y. (2000). Barriers to Distance Education as Perceived by Managers and Administrators: Results of a Survey. In Melanie Clay (Ed.), Distance Learning Administration Annual 2000.

Fullan, M. (1993). Change Forces: Probing the Depths of Educational Reform. New York: Falmer Press.

Moore, M., & Kearsley, G. (1996). Distance Education: A System's View. Belmont, CA: Wadsworth Publishing Company.

Porter, L.R. (1997). Creating the Virtual Classroom. Distance Learning With the Internet. New York, NJ: John Wiley & Sons, Inc.

President's Committee of Advisors on Science and Technology. (March, 1997). Panel on Educational Technology Report to the President on the Use of Technology to Strengthen K-12 Education in the United States. [Online]. Available 8 April, 2000 at: http://www.whitehouse.gov/WH/EOP/OSTP/NSTC/PCAST/k-12ed.html#5.t

Robinson, B. (1995). Teaching Teachers to Change: The Place of Change Theory in the Technology Education of Teachers. [Online]. Available on 17 February 2000 at: http://www.coe.uh.edu/insite/elec_pub/html1995/0311.htm.

University of Illinois. (1999). Teaching at an Internet Distance: the Pedagogy of Online Teaching and Learning. The report of a 1998-1999 University of Illinois Faculty Seminar. [Online]. Available 1 February, 2000 at: http://www.vpaa.uillinois.edu/tid/report/tid_report.html